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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,957	07/24/2003	Sumit Talwalkar	MOTB:033US	1631
7590 08/01/2007 David D. Bahler, Esq. FULBRIGHT & JAWORSKI, L.L.P. Suite 2400 600 Congress Avenue Austin, TX 78701			EXAMINER TSE, YOUNG TOI	
			ART UNIT 2611	PAPER NUMBER
			MAIL DATE 08/01/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/625,957

Applicant(s)

TALWALKAR ET AL.

Examiner

YOUNG T. TSE

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 1-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11, 14, 20 and 22-28 is/are rejected.
- 7) ☒ Claim(s) 12-13, 15-19, 21 and 29-30 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see page 11, line 1 to page 12, line 6, filed on May 21, 2007, with respect to the rejections under 35 U.S.C. 112, first paragraph have been fully considered and are persuasive. The rejection of claims 11-28 has been withdrawn.
2. Applicant's arguments, see page 13, line 31 to page 14, line 18, filed on May 21, 2007, with respect to rejections under 35 U.S.C. 102(e) have been fully considered and are persuasive. The rejection of claim 16 has been withdrawn.
3. Applicant's arguments filed on May 21, 2007 have been fully considered but they are not persuasive.

Regarding the rejections under 35 U.S.C. 102(e), Applicants argue that *Francos* does not show a receiver path. Thus, *Francos* does not teach determining a pair of receiver path correction signals, as recited in the claim. Moreover, *Francos* is completely silent with respect to performing a search to determine a pair of correction signals. In fact, several portions of *Francos* indicate that an averaging *method-not a* search method-is used. *E.g.*, *Francos* at Equations 3 and 4. Therefore, *Francos* does not each and every element of the claim, and the identical invention is not shown in as complete detail as is contained in the claim. Accordingly, Applicant respectfully requests that the Examiner withdraw the 35 U.S.C. § 102(e) rejection of record with respect to claim 11.

The examiner respectfully disagrees. Claim 11 recites a method for suppressing carrier feedthrough in a quadrature modulator, the method comprising: performing a first search to determine a pair of receiver path correction signals; performing a second search to determine a pair of transmitter path correction signals; and using the pairs of receiver path and transmitter path correction signals to suppress carrier feedthrough in the quadrature modulator. Referring to Figure 1 or Figure 2 of Francos' carrier suppression system, the system comprises at least a transmitter section 10, a receiver section 12, and a DC offset estimator 16. Wherein the detailed description of Figures 1 and 2 is described from column 2, line 51 to column 5, line 57.

Regarding claim 11, the carrier suppression system performs the steps of: performing a first search, for example, the IQ demodulator 34 of the receiver section 12 to determine a pair of receiver path correction signals because it is well known to a person skill in the art that the IQ demodulator 34 generates a pair of I and Q receiver path correction signals, which are provided to the DC offset estimator 16; performing a second search, for instance, by the base band modulator 20 of the transmitter section 10 to determine a pair of transmitter path correction signals because the baseband modulator 20 converts an incoming bit stream into a baseband signal having I and Q components (col. 2, lines 61-63), which is also provided to the DC offset estimator 16 through the other elements of the transmitter section 10 and the feedback receiver section 12; and using the pairs of receiver path and transmitter path correction signals, for example, by the DC offset estimator 16 to suppress carrier feedthrough in the IQ quadrature modulator 28 of the transmitter section.

Specification

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Claims 11, 16, 22 and 28 recite either a method or apparatus for precessing carrier feedthrough in a quadrature modulator and using the pairs of receiver path and transmitter path correction signals to suppress carrier feedthrough in the quadrature modulator are not support in the specification. For example, according to the present invention as shown in Figures 2-4 and described in the specification, the pairs of receiver path and transmitter path correction signals used to suppress carrier are not feedthrough in the quadrature modulator 110, however, the pairs of the transmitter path correction signals are outputted from the correction circuit 150 to the upconverter 120 through the pairs of subtraction circuits 113 and 114. Also see claims 12 and 17, wherein subtracting the first and second transmitter path correction signals 151 and 152 by the subtraction circuits 113 and 114 are not from the first and second upconverter input signals 115 and 116, respectively.

Claim Objections

5. Claims 22-28 are objected to because of the following informalities:

In claim 22, lines 11 and 12, "a first correction method" and "a second correction method" should be "the first correction method" and "the second correction method", respectively.

In claim 23, line 3, "the first pair" should be "the second pair".

Where the dependent claims 24-28 depend either directly or indirectly depend from the independent claim 22.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 14 and 20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The amendments of claims 14 and 20 raise the issue of new matter that operating the quadrature modulator (110 or 120) in full-duplex mode. See page 9, lines 4-7 of the specification.

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8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 22-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The amendment of Claim 22 recites a first and second pairs of summers, each of the summers being coupled to a first and second quadrature channels of the quadrature modulator. However, in general, a summer needs at least two inputs for summing the values of the two inputs in order to obtain a summation value of the two input values. Where the dependent claims 23-28 depend either directly or indirectly depend from the independent claim 22.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claim 11 is rejected under 35 U.S.C. 102(e) as being anticipated by Francos et al. U. S. Patent No. 6,801,581 (hereinafter "Francos").

Referring to Figure 1 or Figure 2 of Francos' carrier suppression system, the system comprises at least a transmitter section 10, a receiver section 12, and a DC offset estimator 16. Wherein the detailed description of Figures 1 and 2 is described from column 2, line 51 to column 5, line 57.

Regarding claim 11, the carrier suppression system performs the steps of: performing a first search, for example, the IQ demodulator 34 of the receiver section 12 to determine a pair of receiver path correction signals because it is well known to a person skill in the art that the IQ demodulator 34 generates a pair of I and Q receiver path correction signals, which are provided to the DC offset estimator 16; performing a second search, for instance, by the base band modulator 20 of the transmitter section 10 to determine a pair of transmitter path correction signals because the baseband modulator 20 converts an incoming bit stream into a baseband signal having I and Q components (col. 2, lines 61-63), which is also provided to the DC offset estimator 16 through the other elements of the transmitter section 10 and the feedback receiver section 12; and using the pairs of receiver path and transmitter path correction signals, for example, by the DC offset estimator 16 to suppress carrier feedthrough in the IQ quadrature modulator 28 of the transmitter section.

Allowable Subject Matter

12. Claims 12-13, 15 and 29 would be allowable if rewritten to overcome the objection(s) set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

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13. Claims 16-19, 21 and 30 would be allowable if rewritten or amended to overcome the objections set forth in this Office action.

14. Claims 22-28 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Conclusion

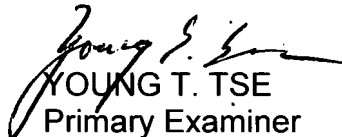
15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YOUNG T. TSE whose telephone number is (571) 272-3051. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad H. Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


YOUNG T. TSE
Primary Examiner
Art Unit 2611